

CLAIMS

### What is Claimed is:

1           1. A vehicle for enabling attachment of an optic fiber to a multi-integrated  
2 optic chip in optical communication therewith, and for maintaining alignment of the  
3 fiber at its end adjacent the chip, comprising:

4 a sleeve having a symmetrically-shaped cavity bounded by termini  
5 which respectively interface with the chip and the fiber; and  
6 an adhesive disposed within the cavity and symmetrically bonding the  
7 fiber to the chip.

1 2. A vehicle according to claim 1 wherein:

2 said cavity has an axis and is internally bounded by a wall which is  
3 substantially centered on the axis and which extends from said chip-interfacing  
4 terminus to said fiber-interfacing terminus;

5 said termini are centered on the axis; and

6 a line lying within any plane intersecting the axis at right angles  
7 thereto and terminating in said cavity wall is bisected into two equal segments.

1           3. A vehicle according to claim 1 wherein said sleeve is configured to fit  
2 onto the chip and is disposed to accept the fiber.

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1           4. A vehicle according to claim 3 wherein:

2            said cavity has an axis and is internally bounded by a wall which is

3    substantially centered on the axis and which extends from said chip-fitting terminus

4    to said fiber-accepting terminus;

5            said termini are centered on the axis; and

6            a line lying within any plane intersecting the axis at right angles

7   thereto and terminating in said cavity wall is bisected into two equal segments.

1        5. A vehicle according to claim 4 wherein said cavity wall slopes from  
2 said chip-fitting terminus to said fiber-accepting terminus.

1        6. A vehicle according to claim 4 in which said sleeve so controls said  
2 adhesive as to provide and preserve a symmetrical bonding of the fiber with  
3 respect to the chip over gravitational and wicking effects.

1           7. A vehicle according to claim 6 in which said cavity wall is shaped as  
2 a truncated right circular cone.

1           8. A vehicle according to claim 6 in which said cavity wall is shaped as  
2 a truncated pyramid.

1           9. A vehicle according to claim 4 in which said sleeve is temporarily  
2 attached to said adhesive and the chip.

1           10. A vehicle according to claim 4 in which said sleeve is permanently  
2 attached to said adhesive and the chip.

1           11. A method for attaching an optic fiber to an optic chip and for  
2 maintaining alignment of the fiber at its end adjacent the chip, comprising the steps  
3 of:

4           positioning a sleeve having a symmetrically shaped cavity on the chip;  
5           placing an adhesive into the sleeve cavity;  
6           inserting the fiber into the cavity;  
7           securing the fiber to the chip; and  
8           curing the adhesive.

1           12. A method according to claim 11 further comprising the step of aligning  
2 the fiber within the cavity and positioning the fiber end adjacent the chip.

1           13. A method according to claim 11 further comprising the step of  
2 removing the sleeve from the chip after the adhesive has cured.

1           14. A method according to claim 11 further comprising the step of leaving  
2 the sleeve securely on the chip after the adhesive has cured.

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1 15. A method according to claim 11 further comprising the step of  
2 providing the sleeve cavity with a truncated pyramid configuration.

1 16. A method according to claim 11 further comprising the step of  
2 providing the sleeve cavity with a truncated right circular cone configuration.

1           17. A method for attaching an optic fiber to an optic chip and for  
2 maintaining alignment of the fiber at its end adjacent the chip, comprising the steps  
3 of:

4 utilizing a sleeve having a symmetrically shaped cavity;  
5 placing an adhesive into the sleeve cavity;  
6 positioning the sleeve onto the chip;  
7 inserting the fiber into the cavity;  
8 aligning the fiber within the cavity and positioning the fiber end  
9 adjacent the chip;  
10 securing the fiber to the chip; and  
11 curing the adhesive.

18. A method according to claim 17 further comprising the step of  
removing the sleeve from the chip after the adhesive has cured.

1           19. A method according to claim 17 further comprising the step of leaving  
2 the sleeve securely on the chip after the adhesive has cured.

1        20. A method according to claim 17 further comprising the step of  
2 providing the sleeve cavity with a truncated pyramid configuration.

1        21. A method according to claim 17 further comprising the step of  
2 providing the sleeve cavity with a truncated right circular cone configuration.